



**JORDAN UNIVERSITY OF SCIENCE AND  
TECHNOLOGY  
INDUSTRIAL ENGINEERING DEPARTMENT**



<b>Course Number and Name</b>	IE441: Statistical Quality Control
<b>Course Description</b>	The course covers the concepts and methods of quality, engineering specifications and tolerances, quality charts, statistical process control (SPC) using control charts of variables and attribute data, acceptance sampling, process capability indices, and cost and management aspects of quality.
<b>Credits and contact hours</b>	3 Credit hours; 3 hours of lectures
<b>Pre- or Co-requisites</b>	IE343: Applied Engineering Statistics
<b>Required/ Elective</b>	Required

<b>Text Book(s)</b>	<ul style="list-style-type: none"> <li>D.C. Montgomery (2012). <i>Introduction to Statistical Quality Control</i>, 7<sup>th</sup> edition, John Wiley &amp; Sons, New York.</li> </ul>
<b>Software tools</b>	Minitab
<b>References</b>	<ul style="list-style-type: none"> <li>D.C. Montgomery and G.C. Runger (2010). <i>Applied Statistics and Probability for Engineers</i>, 5<sup>th</sup> edition, John Wiley &amp; Sons, New York.</li> </ul>

<b>Course Objectives</b>	<ul style="list-style-type: none"> <li>Upon completion of the course students will</li> <li>be able to understand and develop control charts.</li> <li>understand the broad context of quality technologies.</li> <li>understand a quality management theory.</li> <li>understand process analysis.</li> <li>understand quality improvement techniques.</li> <li>understand the meaning of statistical control and random variability.</li> </ul>
<b>Measured Outcomes</b>	3a, 3b and 3f

<b>Evaluation</b>		
<b>Assessment Tool</b>	<b>Expected Due Date</b>	<b>Weight</b>
Quizzes		10 %
First Exam		25 %
Second Exam		25 %
Final Exam	According to the University final examination schedule	40 %

<b>Topics Covered</b>		
<b>Week</b>	<b>Topics</b>	<b>Reading Masterial</b>
1-2	Modern Quality Management and Improvement	Chapter 1
3	The DMAIC Problem Solving Process	Chapter 2
4	Statistical Models for Quality Control and Improvement	Chapter 3
4	Statistical Inference in Quality Control and Improvement	Chapter 4
5	How SPC Works	Chapter 5
6-8	Variables Control Charts	Chapter 6
9-12	Attributes Control Charts	Chapter 7
13-14	Determining Process and Measurement Systems Capability	Chapter 8
15	Acceptance Sampling	Chapters 15, 16